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(54) **ELECTRIC SERVICE FOR RECORDING TRANSMISSION WITHOUT  
RECORDING COMMERCIAL**

(57)Abstract:

PURPOSE: To easilyefficiently and economically eliminate unwanted information from TV broadcasting by on/off control of a recorder while receiving at a controller an on/off instruction which is broadcasted corresponding to an identified term type.

CONSTITUTION: A TV monitor 130 is prepared with respect to every TV broadcasting 110. For each monitor 130an operator watches respective channels and checks the existence of commercial or any unwanted information. When a commercial is shown on the monitorthethe operator actuates an off switch 164 to

allow the transmitter 150 to broadcast an off instruction related to the channel of the operator. In response to this broadcasting instruction a specified processor 1801 stops recording by sending a pause instruction to a related VCR 1901. After the lapse of a certain time the operator observes the monitor 130 and when any program section to be recorded is observed an on command is broadcasted from the transmitter 150 again. In response to this broadcasting-on instruction the specified processor 1801 causes the related VCR 1901 to resume recording.

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## CLAIMS

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[Claim(s)]

[Claim 1] A method of controlling a recorder which receives broadcast containing two or more program parts divided by two or more commercial parts comprising:  
A stage of identifying the 1st period type when one of said two or more of the program parts is broadcast.

A stage of identifying the 2nd period type when one of said two or more of the commercial parts is broadcast.

A stage which broadcasts an on command to a control device through a transmission medium when said 1st period type is identified.

A stage which broadcasts an OFF command to said control device through said transmission medium when said 2nd period type is identified and when said on command is received  
A stage which transmits a recording instruction to said recorder from said control device and a stage which transmits a pause instruction to said recorder from said control device when said OFF command is received.

[Claim 2] A control method according to claim 1 that said broadcast is television broadcasting.

[Claim 3] A control method according to claim 1 that said recorder is a video cassette recorder (VCR).

[Claim 4] A control method according to claim 1 performed by human being's

operator with which said stage to identify monitors said broadcast.

[Claim 5]A control method according to claim 1 which includes further a stage of starting a timer at the time of transmission of said pause instruction and a stage which transmits said recording instruction after said timer determines that a period set beforehand passed after that.

[Claim 6]A television monitor characterized by comprising the following for receiving and displaying television broadcasting containing two or more program parts divided by two or more commercial partsThe 1st control switch for directing the 1st period type when one of said two or more of the program parts is displayed on said television at the time of an operationThe 2nd control switch for directing the 2nd period type when one of said two or more of the commercial parts is displayed on said television at the time of an operationA control device for generating an OFF commandwhen it was connected to said 1st control switch and said 2nd control switchan one command is generated when said 1st control switch operatesand said 2nd control switch operatesA transmitter for being connected to said control device and broadcasting each aforementioned one command and said OFF commandA video cassette recorder which answers a receiver for receiving said one command and said OFF commandand a recording instructionand records said television broadcastingand answers a pause instructionand interrupts record of said television broadcasting.

A video cassette recorder in which said recording instruction and said pause instruction are ability ready for sending covering infrared frequency.

An infrared transmitter for answering a transmission control signal and transmitting said recording instruction and said pause instruction to said video cassette recorder.

When it is connected to said receiver and said infrared transmittersaid transmission control signal is sent to said infrared transmitter and said one command is received by said receiverwhile making said recording instruction transmit to said infrared transmitterA processor for making said pause instruction transmit to said infrared transmitterwhen said transmission control signal is sent

to said infrared transmitter and said OFF command is received by said receiver.

[Claim 7]A television broadcasting record method comprising:

A stage which receives by the 1st television monitor and displays the 1st television broadcasting containing two or more 1st program parts divided by two or more 1st commercial parts.

A stage which receives by the 2nd television monitor and displays the 2nd different television broadcasting from said 1st television broadcasting that contains two or more 2nd program parts divided by two or more 2nd commercial parts simultaneously with it.

A stage of identifying the 1st [ to said 1st television broadcasting ] period type after that when one of said two or more of the 1st program parts is broadcast.

A stage of identifying said 1st period type to said 2nd television broadcasting when one of said two or more of the 2nd program parts is broadcastA stage of identifying the 2nd [ to said 1st television broadcasting ] period type when one of said two or more of the 1st commercial parts is broadcastWhen said 1st period type to said 1st television broadcasting is discriminated from a stage of identifying said 2nd period type to said 2nd television broadcasting when one of said two or more of the 2nd commercial parts is broadcastWhen said 1st period type to said 2nd television broadcasting is discriminated from a stage which broadcasts the 1st one command relevant to said 1st television broadcasting to a processor through a transmission mediumWhen said 2nd period type to said 1st television broadcasting is discriminated from a stage which broadcasts the 2nd one command relevant to said 2nd television broadcasting to said processor through said transmission mediumIt opts for broadcast of a stage which broadcasts the 1st OFF command relevant to said 1st television broadcasting to said processor through said transmission mediumand a request monitored by said processorA stage where said processor establishes one of said 1st television broadcasting or said the 2nd television broadcasting as broadcast of said requestA stage which transmits a recording instruction to a recorder which

records broadcast of said request from an infrared transmitter which is connected to said processor and the said 1st and 2nd one commands relevant to broadcast of said request are specific while answers. A stage which transmits a pause instruction to said recorder from said infrared transmitter which is connected to said processor and the said 1st and 2nd OFF commands relevant to broadcast of said request are specific while answers.

[Claim 8] The television broadcasting record method comprising according to claim 7:

Said stage to broadcast the said 1st and 2nd one commands said 1st and 2nd OFF commands. It is what transmits to the 2nd processor simultaneously with said broadcast to said 1st processor. A stage monitored by said 2nd processor where it opts for broadcast of the 2nd request and said 2nd processor establishes one of said 1st television broadcasting or said the 2nd television broadcasting as broadcast of the 2nd request.

A stage which transmits a recording instruction to the 2nd recorder that records broadcast of the 2nd request from the 2nd infrared transmitter that is connected to said 2nd processor and the said 1st and 2nd one commands relevant to broadcast of the 2nd request are specific while answers.

A stage which transmits a pause instruction to said 2nd recorder from said 2nd infrared transmitter that is connected to said 2nd processor and the said 1st and 2nd OFF commands relevant to broadcast of the 2nd request are specific while answers.

[Claim 9] The television broadcasting record method according to claim 8 with which broadcast of the 2nd request differs from broadcast of said request.

[Claim 10] A stage of establishing a television program schedule to said both television broadcasting. The television broadcasting record method according to claim 8 which includes further a stage which transmits said television program schedule to both said processor and said 2nd processor and a stage of opting for

broadcast of said request and broadcast of the 2nd request using said television program schedule.

[Claim 11] The television broadcasting record method according to claim 8 which includes further a stage of memorizing said television program schedule to said each processor.

[Claim 12] A stage which chooses broadcast of a series of requests to each processor using said television program schedule. The television broadcasting record method according to claim 8 which includes further a stage inserted in program control queuing used in order for each processor to establish broadcast of a request of said series and to control said processor.

[Claim 13] The television broadcasting record method comprising according to claim 12:

A stage which said stage to broadcast is broadcast from the central office and transmits a remote programming code further to either said processor which discriminates specific television broadcasting from said central office or said 2nd processor.

Said remote programming code is inserted in said program control queuing of said one processor and it is said stage of while being specific and making a processor controlling record of said specific television broadcasting.

[Claim 14] Said one processor including an identifier defined beforehand said stage to insert. The television broadcasting record method according to claim 13 which only inserts said remote programming code in said one processor when an identifier relevant to said transmitted remote programming code consists with said identifier defined beforehand.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention generally relates to the method and device for controlling the recorder which receives commercial broadcasting. When it says in detail this invention relates to the method and device for removing commercials from the recorded television broadcasting.

[0002]

[Description of the Prior Art] I hear that the subject repeated among people who use the video cassette recorder (VCR) for recording television broadcasting typically is divided by the desired commercials or advertisement with undesirable record of broadcast and there is. When delay is between the commercials corresponding to a time and the record of a program (broadcast) and subsequent viewing and listening by a program by a user for some of a commercial broadcast or all viewing and listening it may become a thing of time delay or may become unsuitable. Moreover record of the commercials which are scattered in television broadcasting needs the recording tape of much quantity rather than the quantity of a required recording tape when not recording unnecessary contents of broadcast.

[0003]

[Problem(s) to be Solved by the Invention] Conventional technology provides the user with much solution by making into conquest \*\*\*\*\* the problem which records television broadcasting without recording a scattered commercial part. The solution with conventional technology tends to accept each user's request by including the feature (MEANS) of automatic commercial detection in VCR directly. An automatic commercial detection means may not necessarily be exact and commercials may be discriminated from broadcast of a program or un-proper discernment which discriminates broadcast of a program from commercials may be performed as a result the recording mistake of the broadcast of a program is made and recording only unnecessary commercials arises. Moreover the thing with solution cannot be used for the owner of VCR with which the detection

means is not incorporated.

[0004] This invention provides the device and method for removing the contents (commercials) of an unnecessary program from record of television broadcasting efficiently and economically simply.

[0005]

[Means for Solving the Problem] A desirable example of this invention chooses television broadcasting of a request for a user to record from a menu and enables it to choose whether that program is recorded without commercials. This feature can be used using a device separate from VCR. However, in a certain example, this feature may be included in VCR. The desirable above-mentioned feature of an example can be used for a user who does not program VCR and a user of VCR of most which can be used now as a product after sale.

[0006] According to the whole surface of this invention, this invention includes a control station which has a control device of a number relevant to each channel of broadcasting areas. These control devices contain an ON switch and an OFF switch which operate according to the contents of programming (record program of a program) of a specific channel. Each control device is connected to a transmitter and TV scheduler is also connected to this transmitter. A transmitter broadcasts various control information including TV program schedule table and an OFF command relevant to a specific channel. A processor controls VCR to use program record control phenomenon information that received broadcast and it was inputted by user in relation to one and an OFF command which were broadcast and to record an identified channel in the commercials-less mode.

[0007] In operation, a broadcasting record control system monitors raw broadcast (live) of a specific channel preferably using human being's operator. An operator operates an OFF switch when programming which should not be recorded exists in television. Similarly, an operator operates an ON switch when programming which should be recorded is broadcast. A transmitter relates a channel of an operator with OFF or an ON command and transmits this command. A processor



set up record a specific channel relevant to broadcast OFF or an one command controls properly VCR which answered and related to this command.

[0008]A control station transmits periodically TV program schedule table memorized by processor again. A user accesses this calendar and in order to find desired programming through an entry of a calendar he can make it circulate. A program which should be recorded is identified by a name and VCR is made to start and (start up) stop in suitable time (stop) and a processor removes commercials from broadcast when a user wishes. An address is separately possible for each processor and it can be made to be able to operate distantly or can be made non-operative or it can be programmed. The latter feature makes it possible to make suitable data for a user's processor input from a control station in order that a user who did not choose a specific channel for recording beforehand may contact a control station and may record a desired program.

[0009]By use of this invention the user can choose programming of a request for recording easily and can identify record which should be recorded without commercials. The user does not need to know how it will have a special recorder (recorder) or a device will be programmed. The device can react suitable for undesirable programming of other forms that long programming should not be interrupted and recorded and it makes it possible to keep at arm's length commercial information in which a user went out of use or to use a recording tape of the minimum quantity. Other features and advantages of this invention will become clear by explanation which refers to the following accompanying drawings.

[0010]

[Example]Drawing 1 is an accepted block diagram which illustrates one desirable example of the broadcasting record control system 100. Two or more television transmitter  $110_i$  ( $i=1-n$ ) for transmitting different television broadcasting by a different channel as everyone knows exists. The control station 120 contains two or more television monitor  $130_j$  ( $j=1-n$ ) two or more control device  $140_k$  ( $k=1-n$ ) the one transmitter 150 and the one scheduler 160.

[0011] There is a control device 140<sub>k</sub> to the each broadcast monitored and so the control station 120 connects one control device 140<sub>k</sub> with each television monitor 130<sub>j</sub>. Each control device 140<sub>k</sub> of a desirable example includes two switches ON switch 162 and OFF switch 164.

[0012] The transmitter 150 sometimes broadcasts a control packet. The transmitter 150 receives the active signal from each control device 140<sub>k</sub> always when ON switch 162 or OFF switch 164 operates. The transmitter 150 encapsulates each switching action signal with a channel identifier and generates the control packet of one form. Arbitrary control packets including a switching action signal are broadcast promptly.

[0013] The scheduler 160 generates TV program schedule table of the future television broadcasting to the television broadcasting monitored. This calendar identifies television broadcasting by the name the channel (and duration time) of a program and a day of the week. The calendar may include future programming which has an entry of [ in several weeks or several months ] for several days and which is a broadcast schedule depending on specific execution. In a desirable example the scheduler 160 contains the keyboard for data entries by human being's operator. In the processor 180 TV calendar of a desirable example is updated every day including the television programming broadcast data for one week.

[0014] In a desirable example the transmitter 150 uses a paging network RF (radio frequency) transmission line a cable or other media. Although it is preferred to broadcast control and programming information as for the transmitter 150 in a certain application the direct communication media between the transmitter 150 and each processor 180 like use of a telephone wire are realizable for example. It is sure that it is the easiest and broadcast of information provides the system most intelligible for a user.

[0015] Each processor is connected with one of two or more of the video cassette recorder (VCR) 190<sub>i</sub> including processor 180<sub>i</sub> (i=1-m) of plurality [ control system / 100 / broadcasting record ]. In a desirable example although m is

dramatically larger than in an arbitrary predetermined time it is expected that at least one VCR 190<sub>i</sub> which records the specific channel for every channel exists. Each VCR 190<sub>i</sub> can receive the television broadcasting chosen from various things of television transmitter 110<sub>n</sub> as everyone knows and can record these broadcasts on videotape. Each VCR 190<sub>i</sub> answers an infrared electromagnetism signal and chooses a specific channel and controls record by a desirable example (namely on record a start a pause (halt) a stop (stop) OFF etc.).

[0016] Each processor 180<sub>i</sub> can transmit a pause instruction and a recording instruction to the related VCR 190<sub>i</sub> in a desirable example so that it may indicate in detail later. In a certain VCR 190<sub>i</sub> a pause instruction is executed as a stop command. So the pause instruction to which this invention is related interrupts a recording function and includes the arbitrary commands which make it possible to resume record later. Each processor 180<sub>i</sub> contains the original identifier which enables the control station 120 to make the specific thing of processor 180<sub>i</sub> into an operating state and a non operating state selectively again. Broadcast like the broadcast which exists from the control station 120 identified suitably for example the broadcast started from the scheduler 160 is recognized by processor 180<sub>i</sub> of \*\*\*\*\* and such broadcast is made to answer all the processor 180<sub>i</sub> and the programming information in all the processor 180<sub>i</sub> is made to update. Use of the detailed and original identifier about identifying broadcast is mentioned later.

[0017] In operation a desirable example prepares at least one television monitor 130 to each television broadcasting 110. One human being's operator investigates the contents of broadcast of commercials or others which should not be recorded every television monitor 130 seeing each channel. When a commercial part is shown in the television monitor 130 an operator operates OFF switch 164 and makes the OFF command relevant to the channel of the operator broadcast from the transmitter 150.

[0018] Specific processor 180<sub>i</sub> which is set up and set up record in the commercials-less mode so that the broadcast relevant to the channel of the

above-mentioned operator may be recorded answers this broadcast OFF command. Specific these processors 180<sub>i</sub> sends a pause instruction to those related VCR190<sub>i</sub> and makes VCR190<sub>i</sub> stop record. As a result a commercial part is not recorded.

[0019]The operator which is [ a certain time ] overdue and is looking at the specific channel directs resumption of desired programming by observing the program part of the television monitor 130. When the program part which should be recorded is observed an operator operates ON switch 162 and makes the one command relevant to the channel of the operator broadcast again from the transmitter 150.

[0020]Specific processor 180<sub>i</sub> which had interrupted temporarily record of related VCR190<sub>i</sub> set as the channel of the above-mentioned operator answers this broadcast one command again. These processors 180<sub>i</sub> transmits a recording instruction (or pause release) to those related VCR190<sub>i</sub> and makes record of a desired program part resume. In a desirable example an operator continues monitoring those televisions and operates those one and OFF switches at the suitable time. A processor reacts only to the broadcast identified by the channel directions only with during [ suitable ] the time programmed to answer in order to record broadcast of the request without commercials.

[0021]Drawing 2 is a schematic diagram of the packet 200 for transmitting from the transmitter 150. The packet 200 contains header (heading) 210 and data-type ID220 and the data division 230. The header 210 identifies the packet 200 to the processor 180 as information related to the broadcast control record system 100. The transmission with an un-proper header is not processed by the processor 180.

[0022]Data-type ID220 contains the digital words which identify the type of the data of the data division 230. Three different digital words are used in the desirable example. That is they are a front word a channel word and an identifier word. If data-type ID220 includes a front word the processor 180 constitutes TV program schedule table using the data which exists in the data division 230. If

data-type ID220 includes a channel wordthe processor 180 will control record of the related VCR190 using the data which exists in the data division 230. If data-type ID220 includes an identifier wordthe processor 180 will be dealt with as control information on each which was specialized specifically turned to one processor 180, which has an original identifier which adjusts the data of the data division 230 with an identifier word. In a certain exampleprocessor 180, may have a portion of the identifier which identifies specific broadcast groupsand the identifier of data-type ID220 can control group ID and the specific group of processor 180, to adjust using this group identifier.

[0023]To a tabular data identifierthe data division 230 expresses two or more entries which receive the two-dimensional array which has broadcast programming constituted by the date and the channeltherefore can use a date and channel information as an index attached to the array. the name of all the programming scheduled in each array element according to the index so that it might be broadcast by a specific date and channel -- and time memory is carried out.

[0024]The data division 230 contains either an one code or an off-code to a channel data identifier. If the processor 180 is in the recording mode to the channel identified in data-type ID220the processor 180 will transmit a suitable pause instruction for every off-code that VCR190 related as this recording mode has no commercials (at the time of record). Similarlyin a pause conditionthe processor 180 answers an one codeand it resumes record (when it consists with the suitable channel with which the channel identifier is recorded and the commercials-less mode has record).

[0025]The data division 230 is either kill (Kill) / OK code or a remote program recording code to an identifier data identifier. If the processor 180 determines that the identifier will consistent with the identifier in data-type ID220the processor 180 will make itself onewhen itself is turned OFF when the data division 230 consists with a kill codeand the data division 230 consists with an OK code. To TV schedule informationit cannot be used for an OFF device not

answering what was transmitted except for the OK code relevant to the identifier therefore the processor of a non operating state recording control information.

[0026] If there is neither a kill code nor an OK code in the data division 230 when the processor 180 receives broadcast using the identifier the processor 180 will change programming memorized using the data division 230. Although the data division 230 contains the programming data showing a specific date a channel and the time when an identifier appears in data-type ID220 in a desirable example they are not a kill/OK code. Although the user of the broadcasting record control system 100 telephones the control station 120 and the desired program should be broadcast by this technique a user gets \*\* which asks whether have memorized not having preset the processor 180 appropriately. The operator can access a database including the suitable information about a user and can program a user's processor 180 through the special broadcast to a user's processor 180 to record a desired program.

[0027] Drawing 3 is a block diagram of the processor 180 by one desirable example of this invention. The processor 180 contains the computer 300 the receiver 310 the electrically eliminable programmable ROM (EEPROM) 320 the display driver 330 the keystroke 340 and the infrared (IR) transmitter 350. The computer 300 contains the central processing unit (CPU) 370 the internal clock/calendar circuit 372 of a battery drive the read/write memory (RAM) 374 and the read-only memory (ROM) 376. Drawing 3 only expresses the processor of one form suitable for carrying out this invention. It cannot be overemphasized that the system of other forms can be used.

[0028] CPU 370 like 8 bits of 86800 series currently manufactured and sold by SANYO Semiconductor Corporation (Sanyo Semiconductor Corporation) for example programmed appropriately is used for a desirable example. He can use other CPUs and it will be understood that this invention is realizable in the form of others. The flow chart of drawing 5 is performed with the command from the procedure which was memorized by CPU 370 and RAM 374 ROM 376 and

EEPROM320 which suitable process control Shimo hasand was prepared as a part of broadcasting record control system 100.

[0029]The receiver 310 receives the packet broadcast which leads the antenna 380 from the transmitter 150. All the broadcasts from the transmitter 150 are changed into an usable format by the computer 300. After reception and conversionCPU370 is written in RAM374in order to process all the digital data of the packet 200. When CPU370 does not detect the proper header 210CPU370 disregards the broadcast. If TV program schedule table is broadcast and RAM374 memorizesin order to calculate a specific memory location address for the index to the entry of each table and to memorize the entryit will let CPU370 pass to a specific formula. CPU370 memorizes this table at the proper place (location) of EEPROM320.

[0030]The composition of TV program schedule table in RAM374 in a desirable example is as follows. Record of each single in TV program schedule table occupies "m" byte including the namestarting timeand stop time of a program. By the following formulasmake "n" into the maximum number of the program of the broadcast schedule to a channel with arbitrary single daysand let "p" be the number of available channels. In TV program schedule table of the desirable example which memorizes the program information for one weekthe program information for seven days is memorized to the 1st channelcontinuesthe program schedule data for [ to the following channel ] seven days continueand the same work is done to all the channels. In this waythe size of TV program schedule table is a  $7*m*n*p$  byte.

[0031]The address counter of the processor 180 is first set as the start address of TV program schedule table. When a user makes it circulate through an entrym is addedor it is subtracted from the current addressand a desired address is obtained. Since  $m*n$  is added to a counter since it shifts to the next day from the current addressand it shifts to the following channel $7*m*n$  is added.

[0032]After passing a formulaa date code has a value of the ranges from 1 to 7 corresponding to the schedule information for one week. Arbitrary new data is

written in on old data. I hear that CPU370 can search the newest data by direct memory access and it has an advantage of this desirable store method. For example when CPU370 wants to access the date x of the channel y of TV program schedule table CPU370 accesses a suitable memory address as x and y are sent to a formula and mentioned above. Then CPU370 is loaded to RAM374 in order to process the data of the whole quantity from the calculated address.

[0033] When it detects that the broadcast data in which CPU370 was memorized is a commercial record control code CPU370 it is determined whether whether it is controlling record by VCR190 now whether the record being the commercials-less mode and its channel id consistent with the channel which VCR190 is recording. It is ordered CPU370 so that an off-code is answered at the IR transmitter 350 as these three [ all ] are true a pause instruction is emitted and an one code may be answered and a recording instruction may be emitted.

[0034] When the broadcast data in which CPU370 was memorized contains the original identifier memorized by EEPROM220 and the identifier to adjust CPU370 reads the data division of a broadcast packet as mentioned above. To a kill code CPU370 writes a certain code in EEPROM320 and makes it disabling of operation. On the other hand to an OK code CPU370 writes a certain code in EEPROM320 and makes it an operation enabling way. To a remote programming code CPU370 writes the data to the date a channel and time in program record control queuing. To this queuing CPU370 memorizes the information which identifies the specific broadcast which a user wants to record and the mode (for example commercial nothing usually 1 time continuation) of record. In a desirable example the received remote programming code is written in on the arbitrary data which was memorized by program record control queuing and which collides.

[0035] To the programming information and other options of user control CPU370 answers the signal from the keystroke 240 and is given to the option selected on the dot matrix display controlled by the dot-matrix display driver 230 now.

[0036] Drawing 4 is a figure showing the display 400 of the processor 180 by one



desirable example of this invention. The operator button for controlling the feature (picture) of the processor 180 along the edge of the display 400 is arranged. In order to make it circulate through the entry from which TV program schedule table differstwo or more pairs of buttons exist. A part of TV program schedule table is displayed always. These buttonsThe channel rise button 405. And the channel down button 410the date rise button 415 and the date down button 420the show deadline button 425the show time down button 430 and the commercials-less button 435the continuous recording button 440and the program button 445 are included.

[0037]In order to help a userthe display 400 includes the date / segment of time 450 which displays a present date and time. The display 400 includes two or more fields for accessing TV program schedule table including the channel regions 455the date area 460and the show time field 465. As mentioned aboveCPU370 of drawing 3 memorizes TV program schedule tableand accesses this calendar by use of a channel and the date index. If a user inputs a desired channel and date into CPU370 (with rise/down buttons 405410415and 420.) And as are directed by the channel table Shimesu field 455 and the date area 460and a part of specific table (segment) mentioned aboveit is loaded to the memory of a processor. If a user circulates a show time using the rise button 425 and the down button 430the display 400 will give the selected show time to the show time field 465and will confer the name of a program using the show title domain 470.

[0038]A user records the program in the commercials-less modeor (the commercials-less button 435 is pushed) in no. And it should be recorded continuously whether the program should be recorded only onceor (the repeatedly operation of the continuous recording button 440 switches continuous recording and single show record) it chooses. The state of the selection of a user to the commercials-less mode is given to the display 400 by illuminating the symbol of the commercials-less field 475when being set up so that the processor 180 may record in the commercials-less mode. Moreoverthe display driver 330 of drawing 3 illuminates the continuous recording field 480when the state of the

continuous recording button 440 directs continuous mode and at the time of other the display driver 330 illuminates the single record section 485.

[0039] Continuous recording mode enables a user to identify the specific program for recording without the necessity of identifying the appearance of each program manually and marking it periodically. For example if a user marks a specific program with continuous recording about Wednesday the processor 180 will find out and mark the same program for scrutinizing the point and recording TV program schedule table from a present date and time. The processor 180 searches and marks each appearance (and the program is added to program record control queuing positioned at RAM). The processor 180 will continue adding a program until program record control queuing fills or until the whole record time exceeds the maximum time of a recording tape (for example it is set up by the type of VCR as beforehand set by the user like). By exceeding maximum recording time a user resets a system and a user is prevented from any new programs adding it to program record control queuing until the processor 180 directs that a new tape was added. When the total record time exceeds the record time defined beforehand it is warned of a user always.

[0040] The VCR type field 490 displays the value showing the type of VCR set up in order that a user with the selected user may control the processor 180. If it puts in another way the VCR type field 490 will identify the model of VCR which the user has. The information which the user operated the program button 445 as the information given to the display is suitable and was displayed is inputted into program record control queuing.

[0041] Drawing 5 is a flow chart which illustrates operation of the processor which controls VCR according to one desirable example of this invention. Explanation of the flow chart of drawing 5 identifies the element of the broadcasting record control system 100 using the element indicated to drawing 3. The processor 180 performs the stages (step) 500-605. He follows the processor 180 to the stage 505 from the stage 500 i.e. a start and it is confirmed whether it received broadcast. If it turns out that the processor 180 received digital words by the test in the stage

505he will follow the processor 180 to the stage 510. The stage 510 determines the type of broadcastas the data packet 200 identified by drawing 2 was used and mentioned above. If it says in detailafter determining the type of broadcasthe will follow the processor 180 to the stage 515and it will be tested whether the types of data are a kill / O.K. command. When the received broadcasts are a kill/OK codethe processor 180 changes itself into a non-operative state selectively for it to be suitableor makes it an operating stateand returns to the latter-part story 505.

[0042]By the test in the stage 515when types are not a kill/OK codehe follows the processor 180 to the stage 525and it is tested whether the state is one or it is off. For examplewhen the processor 180 is turned OFF by the kill code of the broadcast before identifying the specific identifier of the processor 180in itthe processor 180 returns to the stage 505 promptly. This feature makes it possible for the operator of the broadcasting record control system 100 to change specific processor 180 into a non-operative state selectivelywhen a user does not pay the usage fee of the moonfor example.

[0043]When a device is tested in the stage 525the processor 180 progresses that it is one to the stage 530and it is tested whether broadcast includes TV program schedule table. If the test of the stage 530 shows that data is TV program broadcasting scheduleit will progress to the stage 535 and the processor 180 will update TV schedule memory. Program record control queuing is updated among the stage 535 to the arbitrary programs identified when it was in the continuous recording state. If new TV program schedule table is received to "continuation" record and the marked programthis new schedule will be scrutinized to these programsand queuing will be updated appropriately.

[0044]After updating TV schedule memory in the stage 535the processor 180 returns to the stage 505. If the test in the stage 530 shows that data is not TV program broadcasting schedulehe will follow the processor 180 to the stage 540and it will be tested whether the data contains a remote programming code (RPC).

[0045] If the test in the stage 540 shows that data is a remote programming code it will progress to the stage 545 and the processor 180 will write a suitable entry in program record control queuing. Then the processor 180 returns to the stage 505. If the test in the stage 540 shows that a broadcast type is not a remote programming code he will follow the processor 180 to the stage 550 and it will be determined whether the broadcast is an ON signal over a specific channel.

[0046] It is tested whether if the processor 180 determines that broadcast is an one command the processor 180 will progress to the stage 555 and the processor 180 will control the VCR 190 related to record a specific channel in the commercials-less mode. When the processor 180 is not recording the specific channel or when the record is not the commercials-less mode the processor 180 disregards an one command and returns to the stage 505. However if it turns out that the processor 180 is recording the specific channel in the commercials-less mode by the test in the stage 550 he will follow the processor 180 to the stage 560. In the stage 560 the processor 180 transmits a recording instruction to the VCR 190 related using the IR transmitter 350. Then the processor 180 returns to the stage 505.

[0047] When broadcast is not the one command to a specific channel in the stage 550 the broadcast must be the OFF command to a specific channel. So if the test in the stage 550 is not truth (yes) he will follow the processor 180 to the stage 565. In the stage 565 the processor 180 determines whether it is controlling the VCR 190 related to record a specific channel in the commercials-less mode. While not controlling so that the processor 180 records a specific channel in the commercials-less mode the processor 180 returns from the stage 565 to the stage 505. However record of a channel with the specific processor 180 is controlled and when the record is the commercials-less mode he follows the processor 180 to the stage 570 from the stage 565. In the stage 570 the processor 180 transmits a pause instruction to the VCR 190 related using the IR transmitter 350. Then the processor 180 returns from the stage 570 to the stage 505.

[0048] From the stage 505 the processor 180 determines periodically whether it should change the recording mode of the related VCR 190. In a desirable example when broadcast is not received once [ per minute / about ] the processor 180 performs the stage where the stages 575-605 were chosen. If it says in detail from the stage 505 it will progress to the stage 575 and the processor 180 will have the processor 180 in an operating state or (is it one?) will test whether it is no. When there is nothing to an operating state (no) and a processor return from the stage 575 to the stage 505. However if the processor 180 is in an operating state (yes) it will be tested whether the processor 180 is time to progress to the stage 580 and check program record control queuing to a certain record control phenomenon. When not checking program record control queuing to a record control phenomenon with the processor 180 the processor 180 returns to the stage 505.

[0049] In the stage 580 the processor 180 progresses to the stage 585 that it is time to check program record control queuing to a certain record control phenomenon and the following program record control phenomenon is read from program record control queuing. Then he follows the processor 180 to the stage 590 and it is determined whether the present date and time from its internal time / date circuit 372 consistent with the following program record control phenomenon. If the processor 180 determines that there is no consistency the processor 180 will return to the stage 505. When the present time consistent with the following phenomenon he follows the processor 180 to the stage 595 from the stage 590.

[0050] In the stage 595 the processor 180 determines whether the following program record control phenomenon is a start phenomenon. The processor 180 progresses that the following program record control phenomenon is a start phenomenon to the stage 600. In the stage 600 a processor sends a suitable control code to the VCR 190 related using the IR transmitter 350 and sets it up start record of the channel of a request of VCR 190. Then the processor 180 stands by one and an OFF command in order to return to the stage 505 for example to remove an undesirable programming portion like a commercial

broadcast selectively.

[0051]However in the stage 595 if the processor 180 determines that the following program record control phenomenon is not a start phenomenon the phenomenon will be a stop phenomenon. In the case of a stop phenomenon it progresses at the stage 605 and the processor 180 transmits a stop command to the VCR190 related. Then the processor 180 returns to the stage 505.

[0052]Before the first use a user initializes the processor 180. Custom-made \*\* of the processor 180 is carried out so that 1 time of the setup procedure may operate with VCR190 of a user (it carries out like a user's ordered product). Omnipotent [ of a different group ] and IR control code of model specification are memorized by ROM376. A user chooses IR control code of the group of the request to the specific brand and type of VCR190. Then the processor 180 sets up the value in EEPROM320 and identifies a group with the selected user. Then even if supply of electric power stops the processor 180 can control the VCR190 related. Only IR control code of the identified group is loaded from ROM and it is used by the processor 180 in order to transmit a suitable command to VCR190 as mentioned above.

[0053]Finally this invention records desired broadcast information and gives the easy efficient solution to the problem which disregards undesirable programming. Although the above is perfect explanation about the desirable example of this invention various change modification and an equivalent can be used. For example each broadcast can contain the coding message and digital teletext which can identify program schedule information and commercial data and can generate "one" and "OFF" command. It may be provided in order for a personal computer (PC) interface to make it possible to operate PC as the processor 180. By modem (modem) connection the user can get TV program schedule table and the commercial editing data of real time (real time). This interface may contain the infrared ray controller in order to emit a command to VCR. The interface of further others is combined with a receiver and a modem and the necessity for the connection can be abolished.

[0054]Therefore the above-mentioned statement should not be interpreted as what limits the scope of this invention but the scope of this invention is defined by the claim.

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1] It is the accepted block diagram which illustrates one desirable example of a broadcasting record control system.

[Drawing 2] It is a schematic diagram of the packet 200 for transmitting from the transmitter 150.

[Drawing 3] It is a block diagram of the processor by one desirable example of this invention.

[Drawing 4] It is a figure showing an example of the display of a processor.

[Drawing 5] It is a flow chart which illustrates operation of the processor which controls VCR by one desirable example of this invention.

### [Description of Notations]

100 Broadcasting record control system

110 Television transmitter

120 Control station

130 Television monitor

140 Control device

150 Transmitter

160 Scheduler

162 ON switch

164 OFF switch

180 Processor

190 Video cassette recorder (VCR)

200 Packet

210 Header  
220 Data-type ID  
230 Data division  
300 Computer  
310 Receiver  
320 EEPROM  
330 Display driver  
340 Keystroke  
350 Infrared transmitter  
400 Display

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